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Space Requirements
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OEL-312-72

4 AUG 1972

MEMORANDUM FOR: Director of Logistics

ATTENTION: Chief, Logistics Services Division

SUBJECT: Proposed Alterations to Room GE-78, Headquarters Building

1. Despite the admitted desirability of a larger and more appropriately designed laboratory area, it is evident that the Analysis Division (AND) of the Office of ELINT (OEL) must continue to occupy the spaces in room GE-78, Headquarters Building.

2. During the seven years that AND has occupied these spaces, its equipment requirements have increased by approximately fifty percent (primarily a result of the development and employment of new collection systems which, in turn, required the adoption of newly developed analysis equipment and techniques). This increase in equipment has severely aggravated an already critical space problem and has resulted in an extremely crowded and unsafe condition in the working areas. Additionally, through the years, the ambient noise level has risen to an intolerably high level and currently exceeds established levels for the permanent impairment of hearing.

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3. Measurements conducted with a General Radio 1565A Sound Level Meter on 24 and 25 July 1972 indicated an average noise level of approximately 83db, with frequent peaks to 88 and 89db. (The largest single contributor to the average level appeared to be the supplementary air conditioning equipment. With this equipment off, the level dropped approximately 16db to an average level of 67db.) The consensus of current studies on noise indicates that the threshold for permanent hearing damage falls in a range of 80 to 90db. Although the threshold is somewhat variable (being a function of the frequency of the sound (i.e., in cycles per second), the number of hours exposure to the sound and the age of the individual) it is obvious that the ambient noise level in GE-78 exceeds acceptable limits.

4. Neither the space nor the noise problem is insurmountable. Both can be partially alleviated by replacement of the present air conditioning equipment which, in addition to generating an excessive amount of noise, occupies from 250 to 300 square feet of critically needed space. If the present equipment were to be replaced with a relatively quiet, under-floor-conducted system (e.g., a chilled water system), the noise problem would be substantially abated and AND would gain sufficient space to position its laboratory equipment in a much less congested (and hence, safer) manner.

5. Further argument for replacement of the present air conditioning system derives from the fact that, although it has generally provided adequate cooling capacity, it has been most erratic and unreliable in operation -- necessitating frequent repairs and recharging (and frequently causing sudden delays in important work in process in the laboratory). This situation will not improve since the system is now seven years old and thus approaching the limit of its anticipated service. Should the compressor, or some other critical component fail, its replacement could require a matter of several days, or even weeks, with a corresponding stoppage of high-priority work possibly underway at the time.

6. In order to realize the maximum benefit from installation of a chilled water system, it will be necessary to install raised flooring throughout the laboratory area. This will permit the under-floor installation of ducting to the various items of laboratory equipment and

will provide cooling for the individual items of equipment "from the bottom up." In addition, the raised flooring will permit the highly desirable under-floor installation of all electrical wiring (which will eliminate the necessity for hazardous and unsightly overhead wiring).

7. To provide adequate space for water lines, cooling ducts, and electrical conduits, the flooring should be a minimum of eighteen to twenty-four inches in height and should be substantial enough to support individual items of equipment weighing in excess of 1200 pounds. It is believed that a floor system similar to the one recently installed in Office of Computer Services spaces would be entirely satisfactory for AND's requirements.

8. The noise and space problems facing AND in GE-78 are most critical, both from the standpoint of health and safety. Since both of these problems can be substantially reduced by the alterations suggested, and since alterations and extensions to the chilled water system in the Headquarters Building are imminent, a meeting is urgently requested between representatives of Logistics Services Division/OL and Real Estate and Construction Division/OL, with the objective of establishing a plan and cost estimate for the work needed in Room GE-78.

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DD/S&T

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